

# Notice of Allowability

Application No.

10/821,869

Examiner

Said Broome

Applicant(s)

JEONG ET AL.

Art Unit

2628

## -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 13 April 2006.
2. ☒ The allowed claim(s) is/are 1 and 3-5.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

### Attachment(s)

- |   |   |
|---|---|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892)  | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)           |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____ |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date _____ | 7. <input type="checkbox"/> Examiner's Amendment/Comment                              |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material          | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance  |
|   | 9. <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Allowable Subject Matter***

Claims 1 and 3-5 are allowed.

The following is an examiner's statement of reasons for allowance: The cited prior art does not teach or render obvious the combination of elements recited in the claims as a whole. Specifically, the cited prior art fails to disclose or render obvious the following limitations:

Regarding claim 1, Desbrun et al. teaches an animation method of deformable objects using an oriented material point and generalized spring model in column 1 lines 16-19 and column 2 lines 10-12, as recited in the preamble. Desbrun et al. also teaches modeling a structure of a deformable object into oriented material points and generalized springs in column 2 lines 7-12. Desbrun et al. teaches initializing and calculating forces acting on the material points in column 2 lines 26-28. Desbrun et al. also teaches adding the calculated forces to the corresponding material points and executing numerical integration based upon calculation results in order to obtain new positions and postures of the material points in column 2 lines 13-16 and 31-35. Desbrun et al. teaches updating positions, velocities, postures and angular velocities of the material points based upon the calculation results in the step (b) in column 2 lines 7-10 and column 3 lines 56-58. Desbrun et al. teaches in column 2 lines 22-24 displaying updated results regarding the offset, or corrected positions in response to forces, of the material points as described in column 2 lines 31-35 where it is described that the new positions or offset of the material points in response to forces are updated. Desbrun et al. also teaches inspecting termination conditions and if the termination conditions are not satisfied, repeating the steps (b) to (d) in column 4 lines 34-40. Desbrun et al. fails to teach initializing and calculating torques

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acting on the material points and accumulatively calculating the forces and torques acting on the material points. Pfister et al. teaches providing torques that act on deformable objects in column 12 lines 48-52, therefore they are also initialized. Pfister et al. also teaches accumulatively calculating the forces and torques, which are forces of angular acceleration, acting on the material points with respect to the springs in column 16 lines 39-45. However, Desbrun and Pfister et al. do not teach that the oriented material point and generalized spring model has restoring forces against expansion, bending and twist of the springs, sets reference bending vectors and reference twist vectors of the material points with respect to the springs, and forms bending- and twist-restoring torques determined by length vectors of the springs and the reference vectors of the material points, and forms angular accelerations of the material points based upon the bending- and twist-restoring torques.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Said Broome whose telephone number is (571)272-2931. The examiner can normally be reached on 8:30am-5pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ulka Chauhan can be reached on (571)272-7782. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

S. Broome  
4/27/06 SB

  
ULKA CHAUHAN  
SUPERVISORY PATENT EXAMINER